

CLAIM LISTING

1. (Currently amended) A broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations that are connected to a first side of said network and a head-end via a cable modem that is connected on a second side of said network, which has an upstream component for multi-point end-user to single-point head-end upstream signaling and a downstream component for single-point head-end to multi-point end-user downstream signaling, said broadband network comprising a hierarchical network having at least two levels, said broadband cable modem termination system comprising:

downstream broadband cable modem component means, located at a first level of said hierarchical network, which is proximate to said second side of said network, for transmitting data in a downstream direction received from a source of program material, that is located at said head-end, exclusively in a downstream direction through said network to selected ones of said plurality of end user locations; and

upstream broadband cable modem component means, located at a second level of said hierarchical network which is proximate to said second side of said network and independent of said downstream broadband cable modem component means, for transmitting control data received from at least one of said plurality of end user locations exclusively in an upstream direction through said network to said head-end, wherein said second level is located downstream of said first level in said hierarchical network.

2. (Previously presented) The broadband cable modem termination system of claim 1 wherein said downstream broadband cable modem component means comprises:

means for converting data received in digital baseband IP format to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations.

3. (Previously presented) The broadband cable modem termination system

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of claim 2 wherein said upstream broadband cable modem component means comprises:
means for converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

4. (Previously presented) The broadband cable modem termination system of claim 1 wherein said downstream broadband cable modem component means and said upstream broadband cable modem component means operate independent of each other.

5. (Previously presented) The broadband cable modem termination system of claim 1 wherein said upstream broadband cable modem component means comprises:
means for converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

6. (Currently amended) A method of operating a broadband cable modem termination system for managing data transmissions through a broadband network that interconnects a plurality of end user locations that are connected to a first side of said network and a head-end via a cable modem that is connected on a second side of said network, ~~which has an upstream component for multi-point end user to single-point head-end upstream signaling and a downstream component for single-point head-end to multi-point end user downstream signaling~~, said broadband network comprising a hierarchical network having at least two levels, said method of operating a broadband cable modem termination system comprising:

transmitting data from a downstream broadband cable modem component apparatus, located at a first level of said hierarchical network, which is proximate to said second side of said network, ~~in a downstream direction from a source of program material that is located at said head-end, exclusively in a downstream direction through said network~~ to selected ones of said plurality of end user locations; and

transmitting control data from an upstream broadband cable modem component apparatus, located at a second level of said hierarchical network which is proximate to said

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second side of said network and independent of said downstream broadband cable modem component apparatus, and received from at least one of said plurality of end user locations exclusively in an upstream direction through said network to said head-end, wherein said second level is located downstream of said first level in said hierarchical network.

7. (Previously presented) The method of operating a broadband cable modem termination system of claim 6 wherein said step of transmitting data from a downstream broadband cable modem component apparatus comprises:

converting data received in digital baseband IP format to data in a radio frequency based format for transmission to selected ones of said plurality of end user locations.

8. (Previously presented) The method of operating a broadband cable modem termination system of claim 7 wherein said step of transmitting control data from an upstream broadband cable modem component apparatus comprises:

converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

9. (Previously presented) The method of operating a broadband cable modem termination system of claim 6 wherein said step of transmitting data from a downstream broadband cable modem component apparatus and said step of transmitting control data from an upstream broadband cable modem component apparatus operate independent of each other.

10. (Previously presented) The method of operating a broadband cable modem termination system of claim 6 wherein said step of transmitting control data from an upstream broadband cable modem component apparatus comprises:

converting data received in a radio frequency based format to data in digital baseband IP format for transmission to said head-end.

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